

ABSTRACT

An uncycled electrode for a non-aqueous lithium electrochemical cell including a lithium metal oxide having the formula $\text{Li}_{(2+2x)/(2+x)}\text{M}'_{2x/(2+x)}\text{M}_{(2-2x)/(2+x)}\text{O}_{2-\delta}$, in which $0 \leq x < 1$ and δ is less than 0.2, and in which M is a non-lithium metal ion with an average trivalent oxidation state selected from two or more of the first row transition metals or lighter metal elements in the periodic table, and M' is one or more ions with an average tetravalent oxidation state selected from the first and second row transition metal elements and Sn. Methods of preconditioning the electrodes are disclosed as are electrochemical cells and batteries containing the electrodes.